

**Figure 1.** Unit cell of faujasite-type (X and Y) zeolites including cation sites.

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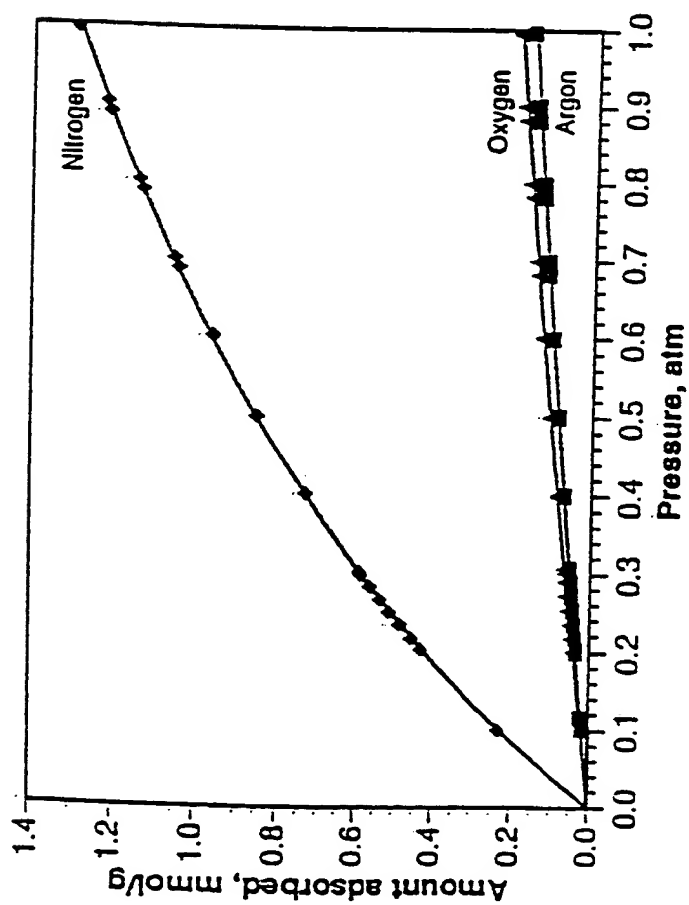


Figure 2. Adsorption isotherms for  $N_2$ ,  $O_2$  and Ar measured at 25°C for  $Li_{0.5}Na_{1.5}X-1.0$  dehydrated *in vacuo* at 350°C.

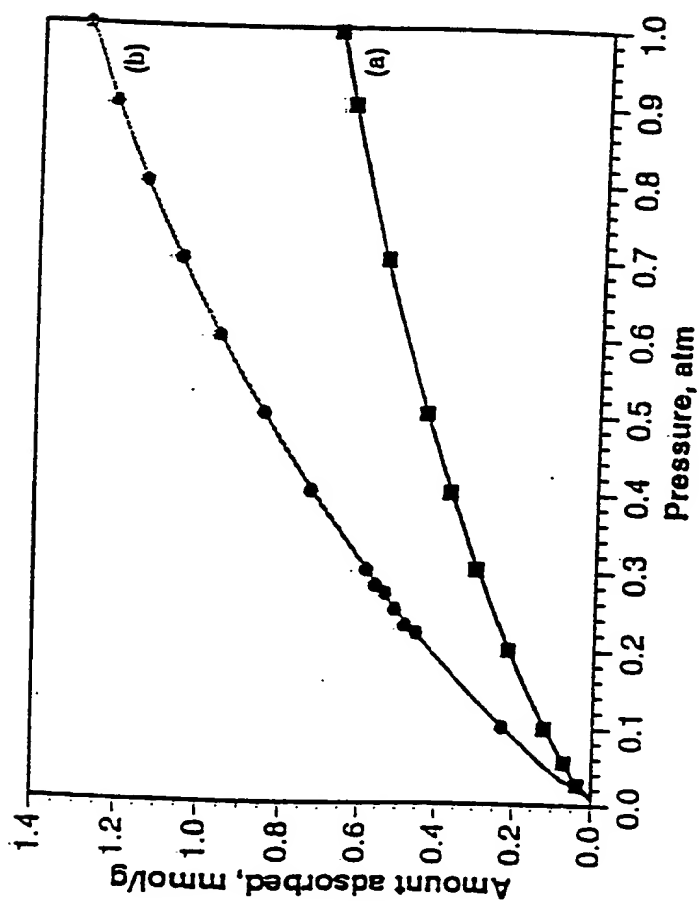


Figure 3. N<sub>2</sub> adsorption isotherms, measured at 25°C for (a) Li<sub>77</sub>Na<sub>9</sub>X-1.25) and (b) Li<sub>94.5</sub>Na<sub>1.5</sub>X-1.0. Both materials were dehydrated *in vacuo* at 350°C.

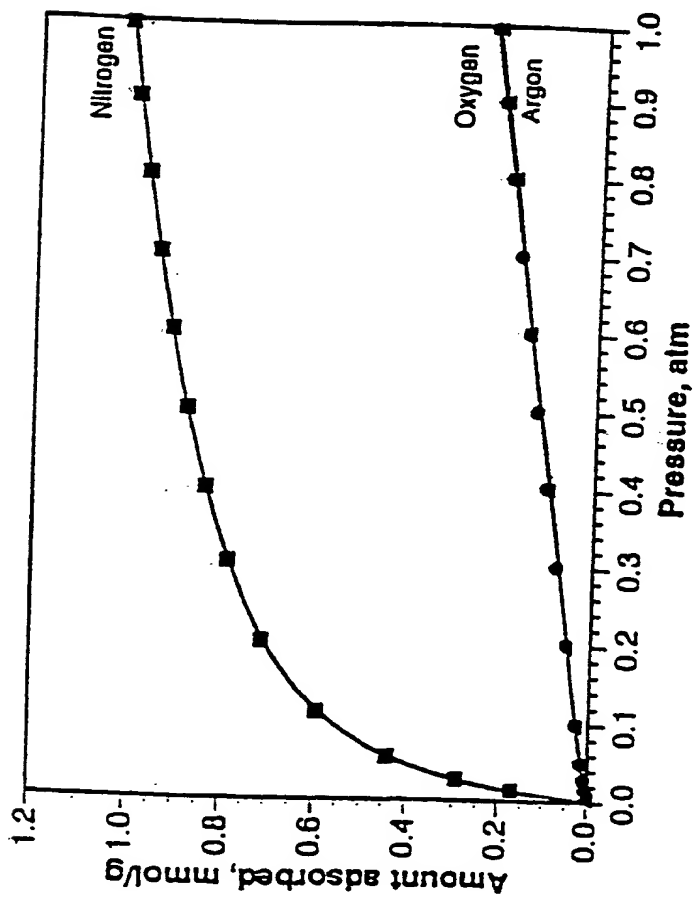


Figure 4. Adsorption isotherms measured at 25°C for N<sub>2</sub>, O<sub>2</sub> and Ar on Ag<sub>95.7</sub>Na<sub>0.3</sub>-X-1.0 dehydrated *in vacuo* at 450°C.

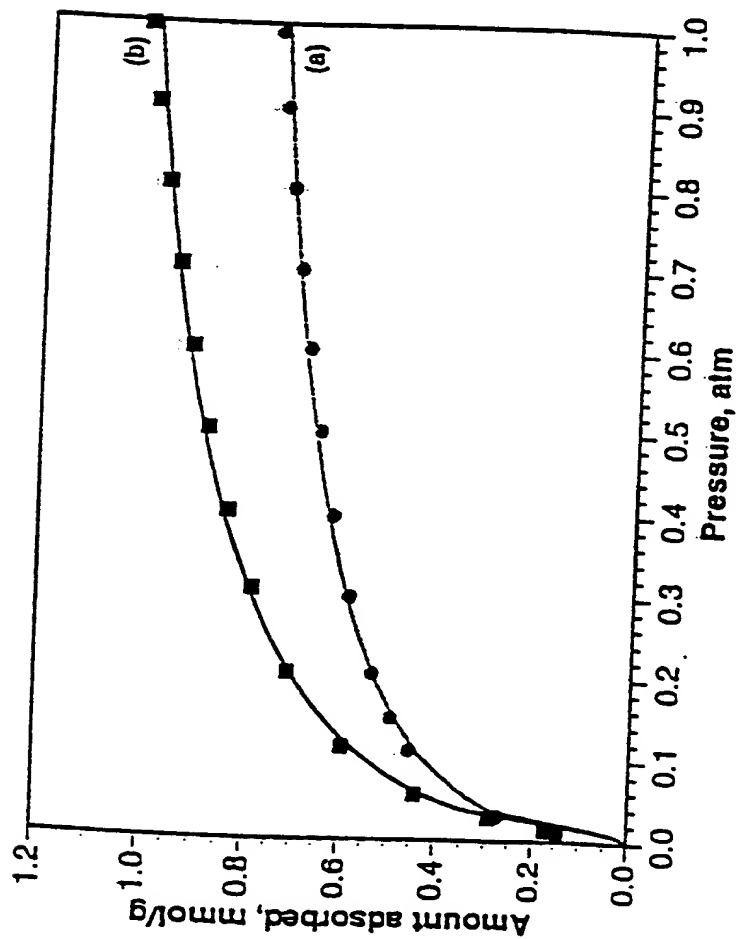


Figure 5.  $N_2$  adsorption isotherms, measured at  $25^\circ\text{C}$ , for (a)  $\text{Ag}_{85.7}\text{Na}_{0.3}\text{-X-1.25}$  and (b)  $\text{Li}_{85.7}\text{Na}_{0.3}\text{-X-1.0}$ . Both materials were dehydrated *in vacuo* at  $450^\circ\text{C}$ .

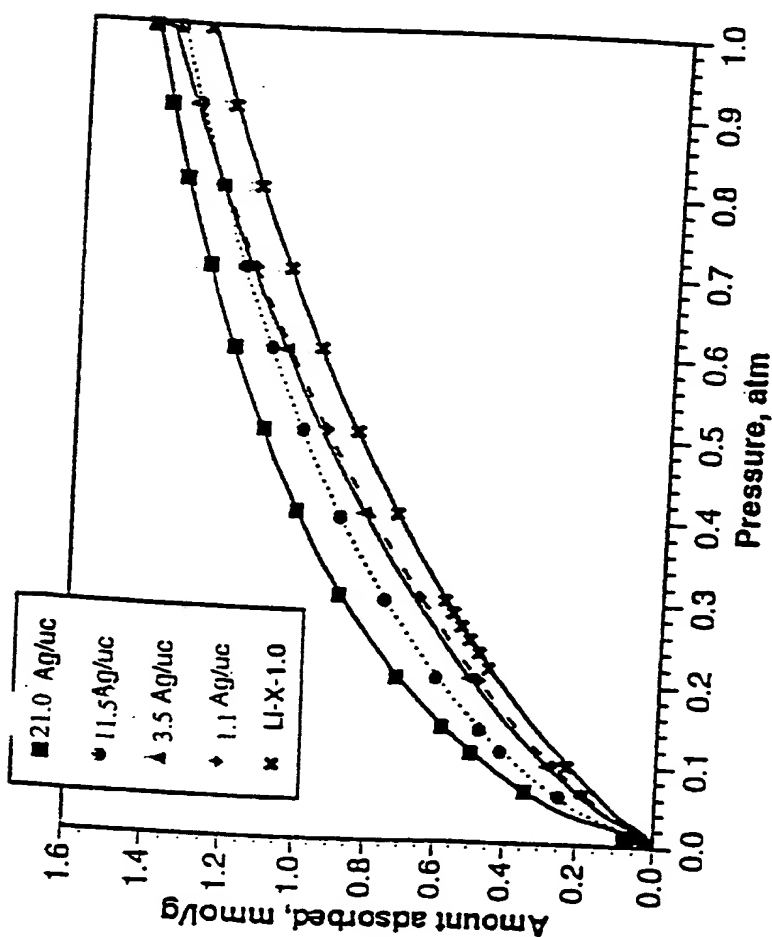


Figure 6.  $N_2$  adsorption isotherm, measured at 25°C, for  $(Li_xAg_{1-x})$  zeolites dehydrated *in vacuo* at 450°C. This shows the addition of increasing amounts of Ag results in a change in the general aspect of isotherm toward that of the fully  $Ag^+$ -exchanged material.

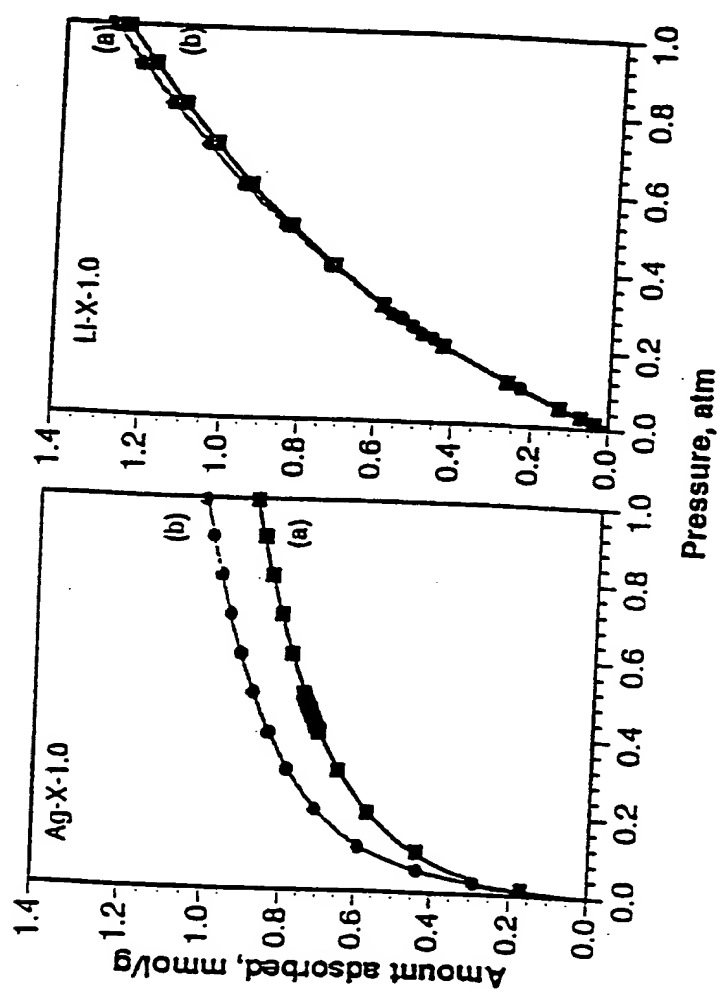


Figure 7.  $N_2$  adsorption isotherm, measured at 25°C, for  $Ag_{95.7}Na_{0.3}X-1.0$  (left, Ag-X-1.0) and  $Li_{94.3}Na_{1.5}X-1.0$  (right, Li-X-1.0). The materials were dehydrated *in vacuo* at (a) 350°C and (b) 450°C.

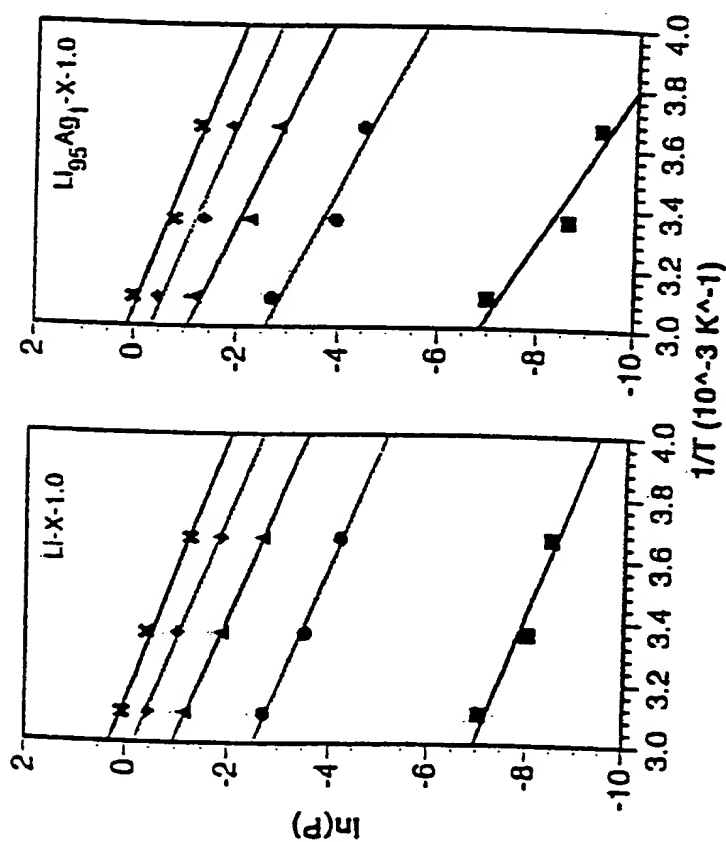


Figure 8.  $\ln(P)$  vs  $1/T$  at different coverages for  $\text{Li}_{94.5}\text{Na}_{1.5}\text{X}-1.0$  (left,  $\text{Li-X}-1$ ) and  $\text{Li}_{94.2}\text{Na}_{0.7}\text{Ag}_{1.1}\text{X}-1.0$  (right,  $\text{Li}_{95}\text{Ag}_1\text{X}-1$ ).



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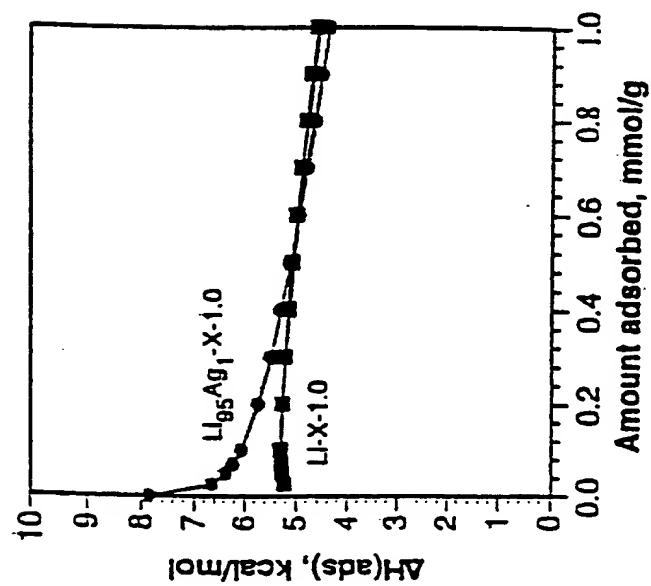


Figure 9. Isosteric heats of adsorption of  $\text{N}_2$  for  $\text{Li}_{94.5}\text{Na}_{1.5}\text{X-1.0}$  (Li-X) and  $\text{Li}_{94.2}\text{Na}_{0.7}\text{Ag}_{1.1}\text{-X-1.0}$  ( $\text{Li}_{95}\text{Ag}_1\text{-X}$ ).

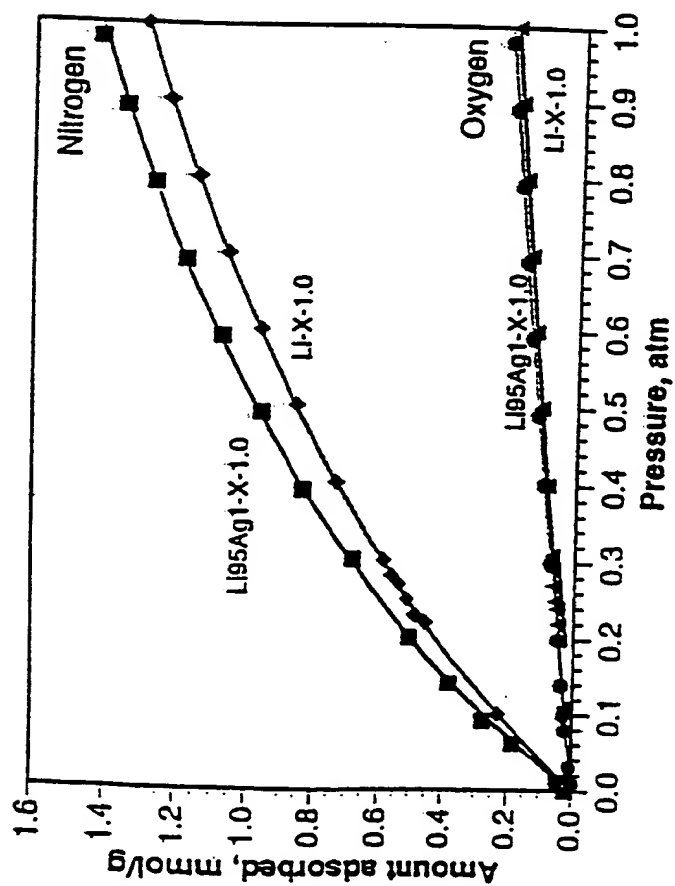


Figure 10. N<sub>2</sub> and O<sub>2</sub> isotherms for Li<sub>94.2</sub>Na<sub>0.7</sub>Ag<sub>1.1</sub>-X-1.0 (Li<sub>95</sub>Ag<sub>1</sub>-X) dehydrated *in vacuo* at 450°C and for Li<sub>94.5</sub>Na<sub>1.5</sub>-X-1.0 (Li-X) dehydrated *in vacuo* at 350°C. All isotherms were measured at 25°C.